Amendments to the Claims:

Please cancel claims 1 to 18 as presented in the underlying International Application No. PCT/EP2003/013546.

Please add new claims 19 to 36 as indicated in the listing of claims below.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-18 (cancelled)

Claim 19 (new): A method for distance and angle positioning of a plurality of close-range target objects, the method comprising the steps of:

a) transmitting a characteristic signal using a transmitting antenna of a first sensor element;

b) receiving the characteristic signal reflected from the plurality of target objects using at least two adjacent receiving antennae of the first sensor element;

c) measuring propagation time differences of the reflected characteristic signal to the at least two adjacent receiving antennas so as to a determine respective distances of the target objects to the first sensor element; and

d) determining an angle of incidence for each of the target objects to the first sensor element, wherein the determining of the angle of incidence includes measuring phase differences of the reflected characteristic signal between the at least two adjacent receiving antennas, by subjecting each of the reflected characteristic signals received by the receiving antennae to a correlation with the transmitted characteristic signal so as to determine a complex correlation function that uniquely associates the measured phase differences with a distance, drawing a conclusion regarding the angle of incidence for each of the target objects according to the principle of retrodirective arrays.

Claim 20 (new): The method as recited in claim 19, further comprising the steps of:

e) transmitting a second characteristic signal using a transmitting antenna of a second

sensor element, the second sensor element disposed at a distance from the first sensor element;

f) receiving the reflected characteristic signal using at least two adjacent second receiving antennae of the second sensor element;

g) measuring propagation time differences of the reflected characteristic signals to the at least two adjacent second receiving antennae of the second sensor element so as to determine respective distances of the target objects to the second sensor element; and

h) measuring phase differences of the reflected characteristic signal between the two adjacent second receiving antennas to determine an angle of incidence of each of the target objects to the second sensor element.

Claim 21 (new): The method as recited in claim 20, wherein the steps e) through h) are performed only when the propagation time differences measured in the first sensor element are approximately equal to zero.

Claim 22 (new): The method as recited in claim 19, wherein the characteristic signal is one of a FMCW pulse signal and a pseudo-noise signal.

Claim 23 (new): The method as recited in claim 19, wherein the further comprising a second sensor element and a third sensor element interconnected with the first sensor elements.

Claim 24 (new): The method as recited in claim 19, further comprising varying a characteristic of the first sensor element, wherein the characteristic includes one of a shape of a lobe of the transmitting antenna, a shape of a lobe of one of the at least two receiving antennae, a panning angle of the transmitting antenna lobe, and a panning angle of the lobe of the one of the at least two receiving antennae.

Claim 25 (new): The method as recited in claim 24, wherein the shape of the lobe having a maximum or a minimum in the direction of the panning angle is varied.

Claim 26 (new): The method as recited in claim 20, wherein the distance between two sensor elements is greater than the distance resolution of any of the sensor elements.

Claim 27 (new): The method as recited in claim 19, wherein measurement of the propagation time differences of the reflected characteristic signals includes detecting maximums of signal/response functions of the characteristic signal, and the measuring of the phase differences includes measuring the phase differences at the particular maximums.

Claim 28 (new): A sensor device for distance and angle positioning of a plurality of close-range target objects, the sensor device comprising:

a first sensor element having a first transmitting antenna and at least two adjacent first receiving antennae, the first transmitting antenna being configured to transmit a characteristic signal, and the at least two first adjacent receiving antennae being configured to receive the characteristic signal reflected from the plurality of target pbjects;

a measuring device configured to measure propagation time differences of the reflected characteristic signal to the two adjacent first receiving antennas so as to determine respective distances of each target object to the first sensor element; and

a device configured to measure phase differences of the reflected characteristic signal between the two adjacent receiving antennae so as to determine a respective angle of each target object to the first sensor element;

a correlator configured to subject each reflected transmission signal received by the first receiving antennae to a correlation with the characteristic signal so as to determine a complex correlation function uniquely associating the obtained phase information with a distance; and

a comparer unit configured to draw a conclusion with regard to the respective angle of incidence for each target object from the phase difference between the signals at the two receiving antennae according to the principle of retrodirective arrays.

Claim 29 (new): The sensor device as recited claim 28, further comprising;

a second sensor element disposed at a distance from the first sensor element, the second sensor element including a second transmitting antenna configured to transmit a second characteristic signal, at least two adjacent second receiving antennas configured to receive the reflected characteristic signal; and

a second measuring device to measure propagation time differences of the reflected characteristic signals between the two adjacent second receiving antennae to determine respective distances of each of the target objects to the second sensor element; and

a second device configured to measure respective phase differences of the reflected characteristic signal between the two adjacent second receiving antennas so as to determine a respective angle of incidences of each of the target objects to the second sensor element.

Claim 30 (new): The sensor device as recited in claim 29, wherein the second device configured to measure phase differences is also configured to detect phase and propagation time differences with the aid of the second sensor element where the propagation time differences measured in the first sensor element are approximately or equal to zero.

Claim 31 (new): The sensor device as recited in claim 28, wherein the characteristic signal includes one of an FMCW signal, a pulse signal, and a pseudo-noise signal.

Claim 32 (new): The sensor device as recited in claim 28, further comprising a second sensor element and a third sensor element interconnected with the first sensor element.

Claim 33 (new): The sensor device as recited in claim 28, wherein the transmitting and/or receiving antennae are designed to enable a varying of at least one characteristic, the characteristic including at least one of a shape of a lobe of the transmitting antenna a shape of a lobe of one of the receiving antenna, a panning angle of the transmitting antenna lobe, and a panning angle of one of he receiving antennae lobes.

Claim 34 (new): The method as recited in claim 33, wherein the shape of the lobe having a maximum or a minimum in the direction of the panning angle capable of being varied.

Claim 35 (new): The sensor device as recited in claim 29, wherein the distance between the first and second sensor elements is greater than a distance resolution of any of the sensor elements.

Claim 36 (new): The sensor device as recited in claim 29, wherein the device configured to

measure phase differences is also configured to measure propagation time differences of the reflected characteristic signals using maximums of signal/response functions of the characteristic signal, the phase differences being measured at the respective maximums.